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Filed : December 16, 2003
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Attorney's Docket No.: INTEL-008PUS
Intel docket #: P17401

AMENDMENTS TO THE DRAWINGS:

The attached replacement sheets of drawings include changes to FIGS. 1 to 12 and replace the

original sheets including FIGS. 1 to 12.

Attachments following last page of this Amendment:

    Replacement Sheet (13 pages)

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REMARKS

Claims 1 to 45 are pending in this application of which claims 1, 27, 34, 38, 42 and 44 are the independent claims. Claim 2 has been canceled without prejudice. Favorable reconsideration and further examination are respectfully requested.

Applicants acknowledge the Examiner's indication that claims 17 and 18 would be allowable if rewritten in independent form to include all of the limitations of the base claim and intervening base claims. Applicants have included features of claim 17 into independent claims 34, 38 and 42.

Applicants thank the Examiner for conducting a teleconference on June 26, 2007 and July 9, 2007. The Examiner reviewed a draft set of amended claims that included amendments to independent claims 1, 34, and 38. The Examiner indicated that he would reconsider amended claim 1 that was amended to include features of cancelled claim 2 based on the arguments presented during the teleconference and included herein. The Examiner also acknowledged Applicants' amendment of independent claims 34 and 38 to include subject matter from claims 2 and 15 to 17. The Examiner indicated that claims 34 and 38 appeared to overcome the art of record, but indicated he would conduct a further review and search. No other agreements were reached.

The Examiner objected to the drawings. Based on the foregoing drawing changes, Applicants respectfully request withdrawal of the drawing objections.

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The Examiner rejected claims 42 to 45 under 35 U.S.C §101 because the phrase computer readable medium is the alleged accepted language referencing MPEP §2106.06. Based on the foregoing amendments to claims 42 to 45, Applicants respectfully request withdrawal of the §101 rejection.

Claim 2 is rejected under 35 U.S.C. §112, second paragraph because "the second microprocessor engine" allegedly lacked antecedent basis. Claim 2 has been canceled. Applicants respectfully submit that the §112 rejection is now moot.

Claims 1 to 16, 19 to 32 and 34 to 45 were rejected under 35 U.S.C. 102(e) as being anticipated by Brinkerhoff et al. (U.S. Patent Publication Number 2004/0213255 hereinafter "Brinkerhoff")

Amended claim 1 is directed to a processor. The processor includes a first multi-threaded processor engine configured for connection to a serial link, a second multi-threaded processor engine, coupled to the first multi-threaded processor engine by an interface, to process data received by the first multi-threaded processor over the serial link and to provide the processed data to the first multi-threaded processor engine for transmission over the serial link and one or more communication data structures usable by the first and second multi-threaded processor engines to control interaction therebetween. At least one of the one or more communication data structures is usable by the first and second multi-threaded processor engines to control the rate at which the processed data is provided to the first multi-threaded processor engine by the second multi-threaded engine.

The applied art is not understood to disclose or to suggest the foregoing features of claim 1. In particular, Brinkerhoff does not disclose or suggest that at least one of the one or more communication data structures is usable by the first and second multi-threaded processor engines to control the rate at which the processed data is provided to the first multi-threaded processor engine by the second multi-threaded engine.

Brinkerhoff discloses that a scheduler 806 provides quality of service (QoS) shaping by shaping the output of the system (see paragraph [0104] of Brinkerhoff). The Examiner has indicated that the first multi-threaded processor engine and the second multi-threaded processor engine are disclosed in FIG. 7 of Brinkerhoff as processor 74 and processor 63, respectfully (see page 4 of the Office Action). However, neither of the processors 63, 74 uses the scheduler 806 to control the rate at which the processed data is provided from one processor to another. Rather, Brinkerhoff controls data flow by the scheduler 804 alone. The Examiner has also relied on a portion of Brinkerhoff (paragraphs [0098] and [0099]) that coincidentally mentions data structures (see page 4 of Office action). However, these data structures have nothing to do with the scheduler 806. Moreover, the configuration data is not disclosed or suggested by Brinkerhoff to indicate controlling the rate at which the processed data is provided much less controlling the rate at which the processed data is provided to the first multi-threaded processor engine by the second multi-threaded engine. Specifically, Brinkerhoff never discloses or suggests that the processors 63, 74 use the scheduler 804 to control the rate at which the processed data is provided to one of the processors 74 by the other processor 64 or visa-versa. Therefore, Applicants submit that Brinkerhoff does not disclose or suggest that at least one of the one or

more communication data structures is usable by the first and second multi-threaded processor engines to control the rate at which the processed data is provided to the first multi-threaded processor engine by the second multi-threaded engine.

Furthermore, Brinkerhoff never discloses or suggests that processors, 64, 74 are multi-threaded. The Examiner has indicated that processors in Brinkerhoff use MIPS and MIPS uses multi-threading (see page 4 of the Office Action). Applicants submit that the Examiner has not provided support that MIPS includes multi-threading in Brinkerhoff. Applicants respectfully submit that the Examiner provide support to support his assumption.

Independent claims 27, 34 and 38 include the feature that at least one of the one or more communication data structures is usable by the first and second multi-threaded processor engines to control the rate at which the processed data is provided to the first multi-threaded processor engine by the second multi-threaded engine. Applicants submit the Brinkerhoff reference should also be withdrawn with respect to claims 27, 34, and 38 for at least the same reasons as claim 1. Furthermore, independent claims 27, 34, and 38 were amended to include features of claims 15 to 17 for which claim 17 included allowable subject matter.

Independent claim 42 is a computer-readable medium having stored thereon instructions that when executed by a machine result in the following: performing multi-threaded packet processing on data received by a multi-threaded physical layer processor engine over a serial link; providing the processed data to the multi-threaded physical layer processor engine for transmission over the serial link; and using one or more communication data structures to control interaction with the multi-threaded physical layer processor engine. At least one or more

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communication data structures include a shared memory including memory locations corresponding to each of the channels that handles cell data. Each memory location stores a count value indicating the number of cells transmitted by the multi-threaded physical layer processor engine for the channel to which such memory location corresponds. The computer-readable medium having further stored thereon instructions that when executed by a machine result in the following: polling one of the memory locations of a selected one of the channels; and comparing the count value with another count value indicative of a number of cells scheduled for transmission to determine a number of cells in flight.

The applied art is not understood to disclose or to suggest the foregoing features of claim 42. In particular, Brinkerhoff does not disclose or suggest using polling one of the memory locations of a selected one of the channels; and comparing the count value with another count value indicative of a number of cells scheduled for transmission to determine a number of cells in flight. Applicants submit that this feature corresponds with claim 17 for which the Examiner has indicated includes allowable subject matter. Therefore, Applicants submit that claim 42 is allowable.

Independent claim 44 is directed to a computer-readable medium having stored thereon instructions that when executed by a machine result in the following enabling multi-threaded packet processing of data received from a communications medium via a multi-threaded physical layer network processor engine, which receives serial data from a serial link, or other media device; and using the multi-threaded physical layer network processor engine as a co-processor to perform a hardware accelerator task associated with the multi-threaded packed processing.

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The applied art is not understood to disclose or to suggest the foregoing features of claim 44. In particular, Brinkerhoff does not disclose or suggest using the multi-threaded physical layer network processor engine as a co-processor to perform a hardware accelerator task associated with the multi-threaded packed processing.

The Examiner's rejection does not acknowledge that claim 44 includes the claim element "using the multi-threaded physical layer network processor engine as a co-processor to perform a hardware accelerator task associated with the multi-threaded packed processing" (emphasis added). Thus, the Examiner has not indicated wherein in Brinkerhoff the foregoing claim element is found. Therefore, Applicants have no rational basis in which to make a response. Applicants submit that since the rejection is improper that the next office action be made non-final.

For at least the foregoing reasons, Applicants request withdrawal of the art rejections.

Applicants submit that all dependent claims now depend on allowable independent claims.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for withdrawing the prior art cited with regards to any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as intent to concede any issue with regard to any claim, except as

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specifically stated in this paper, and the amendment of any claim does not necessarily signify

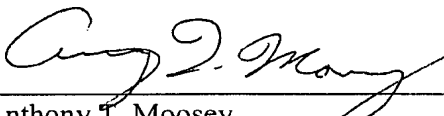concession of unpatentability of the claim prior to its amendment.

Applicants submit that the entire application is now in condition for allowance. Such

action is respectfully requested at the Examiner's earliest convenience.

All correspondence should be directed to the address below. Applicants' attorney can be

reached by telephone at (781) 401-9988 ext. 23.

No fee is believed to be due for this Response; however, if any fees are due, please apply

such fees to Deposit Account No. 50-0845 referencing Attorney Docket: INTEL-008PUS.

Respectfully submitted,

Date: July 17, 2007

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